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*Gretchen King*  
Gretchen King



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

*10/18/03  
Patent  
8/1/03*

In re Application of:  
**Bussear et al.**

Serial No.: **10/047,728**

Filed: **01/15/02**

For: **Apparatus and Methods for  
Using a Surface-Based  
Oscillator as a Downhole  
Seismic Source**

Examiner: **McCloud, R.**

Art Unit: **2837**

Attorney Docket No.: **284-15718-US**

MS: Non-Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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**RESPONSE TO OFFICE ACTION**  
**MAILED MAY 20, 2003**

Sir:

Applicant responds as follows to the office action mailed May 20, 2003:

**AMENDMENTS**

**In the Claims:**

Please cancel claim 8.

Please amend the claims as follows:

1. (First Amended) An apparatus for determining a subsurface characteristic of a formation penetrated by a wellbore, comprising: